



# HAWAII STATE ENERGY OFFICE STATE OF HAWAII

DAVID Y. IGE  
GOVERNOR

SCOTT J. GLENN  
CHIEF ENERGY OFFICER

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Testimony of  
**SCOTT J. GLENN, Chief Energy Officer**

before the  
**HOUSE COMMITTEE ON FINANCE**

Wednesday, April 6, 2022  
1:30 PM  
State Capitol, Conference Room 308 & Videoconference

**SUPPORT  
SB 2510, SD2, HD1  
RELATING TO RENEWABLE ENERGY.**

Chair Luke, Vice Chair Yamashita, and Members of the Committee, the Hawai'i State Energy Office (HSEO) supports SB 2510, SD2, HD1, which amends the Hawaii State Planning Act to give consideration to reducing reliance on energy imports, ensuring that all new utility scale electricity generation projects are renewable, balancing of grid resources including firm renewable energy resources, reliable replacement of fossil fuel generation with balanced grid resources, prohibiting fossil fuel generation after 12/31/2045 except in certain circumstances, and expanding vocational training in renewable energy and related industries.

HSEO appreciates the amendments made in SB 2510 SD2 HD1. The current bill leaves in place the existing functional plan process and adds renewable energy to section 226-10, Hawai'i Revised Statutes (HRS), "Objective and policies for the economy--potential growth and innovative activities;" revises HRS section 226-18 by modifying and adding several objectives to be considered when planning for Hawai'i's energy systems and adding definitions of "firm renewable energy," "grid resources," and "intermittent renewable generation;" revises HRS section 226-103, "Economic priority guidelines," by adding "renewable energy and related industries" to a vocational training item and "incentives to encourage the development of grid resources" to priority guidelines for energy use and development.

HSEO agrees that energy topics have great potential to provide economic and energy security benefits to Hawai'i, and their inclusion is appropriate in state planning efforts.

Thank you for the opportunity to testify.



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented Before the  
House Committee on Finance  
Wednesday, April 6, 2022 at 1:30 p.m.

By  
Richard Rocheleau, Director  
Hawai'i Natural Energy Institute  
And  
Michael Bruno, PhD  
Provost  
University of Hawai'i at Mānoa

### SB 2510 SD2 HD1 – RELATING TO RENEWABLE ENERGY

Chair Luke, Vice Chair Yamashita, and members of the committee:

SB 2510 SD2 HD1 amends Hawaii Revised Statutes, Section 226-10 to accelerate research and development of firm renewable energy and to increase research and development on energy production. SB 2510 SD2 HD1 also amends Hawaii Revised Statutes, Section 226-18 to decrease the state's reliance on energy imports, to require the balancing of grid resources to achieve an affordable, equitable, resilient, low greenhouse emissions energy system.

The Hawai'i Natural Energy Institute **supports the objectives noted above but does have concerns regarding the language in Section 2 a(4)** which seeks to reduce greenhouse gases by, among other actions, ensuring that all new utility scale electricity generation projects shall be renewable. While we agree with the intent of this language, we believe it may be too restrictive and may, contrary to intent, slow the reduction of greenhouse gas emissions from the grid. Specifically, detailed modeling of grid operations shows that the availability of small fossil-fuel generators that run sparingly can, under some circumstances, improve grid reliability and allow reduced usage and even faster retirement of aging oil units resulting in a net system wide fossil fuel reduction.

While these flexible firm units should be required to operate using cost-effective renewable fuels whenever they are available; operation using fossil fuels when they are not may still move us toward our low GHG objectives and improve reliability.

We therefore respectfully recommend that the language in this section be amended as follows

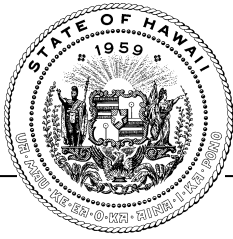
On page 5, lines 12-16: (4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use[; and], including but not limited to ensuring that all new utility scale electricity generation projects shall be renewable **capable**;

For consistency, we recommend the following

On page 7, lines 4-6; and reduce reliance on imports, and that electrical energy services shall be renewable **capable**.

and, on page 8, lines 13-17: (5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply ~~[option]~~ grid resources options that are **not fossil fuels renewable capable**, and maximizes efficient technologies;

Thank you for the opportunity to provide this testimony on SB 2510 SD2 HD1.



**STATE OF HAWAII  
OFFICE OF PLANNING  
& SUSTAINABLE DEVELOPMENT**

**DAVID Y. IGE**  
GOVERNOR

**MARY ALICE EVANS**  
DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813  
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Statement of  
**MARY ALICE EVANS**  
Director, Office of Planning and Sustainable Development  
before the  
**HOUSE COMMITTEE ON FINANCE**  
Wednesday, April 6, 2022  
1:30 PM  
State Capitol, Conference Room 308 & Videoconference  
in consideration of  
**SB 2510, SD2, HD1**  
**RELATING TO RENEWABLE ENERGY.**

Chair Luke and Vice Chair Yamashita, and Members of the House Committee on Finance.

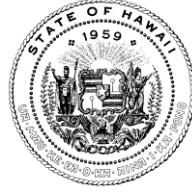
The Office of Planning and Sustainable Development (OPSD) offers **comments** on SB 2510, SD2, which amends the Hawaii State Planning Act to give consideration to reducing reliance on energy imports, ensuring that all new utility scale generation projects are renewable, balancing of grid resources, including firm renewable energy resources, reliable replacement of fossil fuel generation with balanced grid resources, prohibiting fossil fuel generation after 2045 except in an emergency, and expanding vocation training in renewable energy and related industries.

OPSD supports the inclusion of firm renewable energy, such as bio-fuels, geothermal and dispatchable battery storage, as a required component of a diversified portfolio of renewable energy generation for each island to improve grid reliability in the State Planning Act. OPSD supports exceptions for fossil fuel use during emergencies. OPSD also supports balancing decisions on energy resource options with considerations of environmental, social, cultural, and public health costs and benefits that may offset least-cost options. Finding the right balance at any point in the journey to 2045 is the job of the Hawaii State Energy Office and the Public Utilities Commission.

OPSD appreciates the opportunity to support Legislative changes to Chapter 226-18, objectives and policies for facility systems – energy, by providing guidelines as required by Chapter 226-56 (b).

OPSD looks forward to working in close cooperation with the Legislature, DBEDT, HSEO, and experts in renewable energy which may include the Public Utilities Commission, the Hawaii Natural Energy Institute, Hawaii's four counties, the electric utilities, energy developers, and community stakeholders in an update of the Energy Functional Plan.

Thank you for the opportunity to offer comments on this measure.



DAVID Y. IGE  
GOVERNOR

JOSH GREEN  
LT. GOVERNOR

**STATE OF HAWAII  
OFFICE OF THE DIRECTOR  
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS**

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CATHERINE P. AWAKUNI COLÓN  
DIRECTOR

JO ANN M. UCHIDA TAKEUCHI  
DEPUTY DIRECTOR

**Testimony of the Department of Commerce and Consumer Affairs**

**Before the  
House Committee on Finance  
Wednesday, April 6, 2022  
1:30 PM**

**Conference Room 308 & Videoconference**

**On the following measure:  
S.B. 2510, SD2, HD1, RELATING TO RENEWABLE ENERGY**

Chair Luke and Members of the Committee:

My name is Dean Nishina, and I am the Executive Director of the Department of Commerce and Consumer Affairs' (Department) Division of Consumer Advocacy. The Department offers comments on this bill.

The purpose of this bill is to amend the Hawaii State Planning Act to give consideration to reducing reliance on energy imports, ensuring that all new utility scale electricity generation projects are renewable, balancing of grid resources including firm renewable energy resources, reliable replacement of fossil fuel generation with balanced grid resources, prohibiting fossil fuel generation after December 31, 2045 except in certain circumstances, and expanding vocational training in renewable energy and related industries. This HD1 version amends the bill by changing many prescriptive and quantitative provisions related to energy resources from earlier versions into flexible and qualitative provisions.

The Department appreciates the intent of ensuring that there is diversification of energy resources and the need to maintain a mixed portfolio of resources to maintain

reliability to avoid the risks that may be associated with having an over-reliance on a less diverse portfolio of resources. While the Department generally defers to the Office of Planning as it relates to the implementation of the proposed policy, the Department offers that there have been changes in technologies and resources that have affected long-term planning for electric generation and, with those changes, the ability to meet electric grid needs have significantly moved away from the starting point of 100% of all capacity and energy from firm, dispatchable generation. Thus, the Department appreciates how the HD1 version does not require a prescriptive approach that includes fixed minimum percentages of a particular type of resource and how HD1 establishes language that appears to be more consistent with the policy and planning expectations of this section of the Hawaii Revised Statutes.

Thank you for the opportunity to testify on this bill.



Email: [communications@ulupono.com](mailto:communications@ulupono.com)

HOUSE COMMITTEE ON FINANCE  
Wednesday, April 6, 2022 — 1:30 p.m.

**Ulupono Initiative offers comments with concerns on SB 2510 SD 2 HD 1, Relating to Renewable Energy.**

Dear Chair Luke and Members of the Committee:

My name is Micah Munekata, and I am the Director of Government Affairs at Ulupono Initiative. We are a Hawai'i-focused impact investment firm that strives to improve the quality of life throughout the islands by helping our communities become more resilient and self-sufficient through locally produced food; renewable energy and clean transportation; and better management of freshwater and waste.

**Ulupono offers comments with concerns on SB 2510 SD 2 HD 1**, which amends the Hawai'i State Planning Act to give additional consideration to reducing Hawai'i's reliance on energy imports, ensuring that Hawai'i's energy portfolio is a diversified and balanced mix of renewable energy generation, and prohibits fossil fuel generation after December 31, 2045, except in certain circumstances, as well as expands vocational training in renewable energy and related industries.

Ulupono appreciates the amendments made in House Draft 1, and supports removing the minimum percentages attached to firm renewable energy generation. Ulupono believes the State will meet its clean energy goals through renewable energy technologies. Ongoing efforts led by the Hawai'i Public Utilities Commission, Hawaiian Electric, and interested stakeholders are underway to determine the State's energy resource portfolio, including the Integrated Grid Planning (IGP) docket. As an engaged stakeholder in the IGP docket, Ulupono is confident that this energy planning process will result in an optimal, cost-effective integrated energy portfolio composed of firm, renewable, and storage resources. To the extent SB 2510 SD 2 HD 1 imposes any constraints to the utility's current IGP process, it is likely that these constraints may be harmful to Hawai'i's overall energy transition and ratepayers. As such, we ask that this committee hold this measure and allow ongoing energy planning efforts to continue through the IGP process.

Thank you for the opportunity to testify.

Respectfully,

Micah Munekata  
Director of Government Affairs

*Investing in a Sustainable Hawai'i*



## Environmental Caucus of The Democratic Party of Hawai'i

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To: The Honorable Sylvia Luke, Chair  
The Honorable Kyle T. Yamashita, Vice Chair  
Members of the Committee on Finance

Re: **SB 2510 SD2 HD1 RELATING TO RENEWABLE ENERGY**

Hearing: Wednesday, April 6, 2022, 1:30 p.m., Conference Room 308 & videoconference

Position: **Strong Opposition**

Aloha, Chair Luke, Vice Chair Yamashita, and Members of the Committee on Finance:

The Environmental Caucus of the Democratic Party of Hawai'i stands in strong opposition of SB 2510 SD2 HD1. This measure would amend the Hawaii State Planning Act to give consideration to reducing reliance on energy imports, ensuring that all new utility scale electricity generation projects are renewable, balancing of grid resources including firm renewable energy resources, reliable replacement of fossil fuel generation with balance grid resources, prohibiting fossil fuel generation after 12/31/2045 except in certain circumstances, and expanding vocational training in renewable energy and related industries. This bill would take effect on 7/1/2050.

This measure includes a policy of incentives to facilitate and encourage fuel-producing crops and energy-producing crops and bioenergy and standards for achieving renewable portfolio standards. Our opposition is based on incentivizing and encouraging fuel-producing and energy-producing crops and bioenergy. This appears to be in contradiction to Page 9 Lines 3-5 of the SB 2510 SD2 HD1 which calls for "(8) Support actions that reduce, avoid, or sequester greenhouse gasses in utility, transportation, and industrial sector applications." It also contradicts Page 9, Lines 6-8 which states: "(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives."

Page 3, Lines 7-8, sets forth renewable energy technologies that are congruent with reducing, avoidance, and sequestration of greenhouse gas emissions such as WIND, SOLAR, OCEAN, UNDERGROUND RESOURCES AND SOLID WASTE. Adding "firm renewable energy" as defined, appears to contradict the reduction of greenhouse gas emissions as it is defined as "renewable energy that is always available on the demand of the energy system operator consistent with the terms of an approved power purchase agreement." Fuel-producing crops and energy-producing crops and bioenergy fit into this new definition.





April 6, 2022

Page 2

Evidence has shown that wood is much less energy dense than coal; therefore, a lot more wood needs to be incinerated to produce the same amount of electricity as coal. As a result, burning wood produces much higher greenhouse gas emissions than coal (about 40 percent higher) for every unit of energy generated.

In addition, cutting forests would eliminate important carbon “sinks” that would otherwise continue capturing carbon from the atmosphere. Forests currently absorb 15 percent of greenhouse gas emissions each year.

Further, trees take a long time to regenerate. Even with immediate replanting, many decades or even centuries of growth may be necessary before such forest will be able to remove the emissions created from burning it in the first place.

Finally, with the cost of food being so high, and as much as 90% of our food supply is currently imported from out of state, more arable land needs to be designated for growing food and promoting food-security. Hawaii, with its limited land space needs to grow diversify and more food crops, not crops for energy-producing and fuel-producing by incineration. This is especially troubling when there is clear evidence that the burning of energy-producing and fuel-producing crops would create more greenhouse gas emissions than burning coal. As such, for purposes of averting climate change, Hawaii would be taking a giant leap backward rather than moving forward with this form of renewable energy.

In our view, this bill is highly detrimental and will cause harmful effects on human and environmental health; accordingly, we respectfully request that this bill be deferred by your Committee.

Mahalo for the opportunity to testify,

*Melodie Adyja*

*Alan A. Burdick*

Co-Chairs, Environmental Caucus of the Democratic Party of Hawai'i

Email: [legislativepriorities@gmail.com](mailto:legislativepriorities@gmail.com)

**SB-2510-HD-1**

Submitted on: 4/5/2022 7:18:25 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Richard Ha	Sustainable Energy Hawaii	Support	Written Testimony Only

Comments:

Aloha Chair Luke

Sustainable Energy Hawaii supports SB 2510 Relating to Renewable Energy. Geothermal is the most valuable energy resource we have here in Hawaii. it's 24/7 power forever. The heat/steam is free forever. It can take us from green electricity, to green hydrogen and to green ammonia, leveraging its value to future generations the further up the chain we go.

Mahalo

Richard Ha

President

Sustainable Energy Hawaii

**SB-2510-HD-1**

Submitted on: 4/5/2022 7:28:27 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Alan B Burdick	Progressive Democrats of Hawaii	Oppose	Written Testimony Only

Comments:

Progressive Democrats of Hawaii stand in **STRONG OPPOSITION** to SB 2510 SD2 HD 1, because it would require wood burning as a "renewable" source of energy production. It is a **VERY DIRTY** source of energy production and is actually worse than burning coal or other fossil fuels. There are much better solutions to our energy-production problems. SB 2510 does not provide them. Please defer this bill. Mahalo!



**Hawaiian  
Electric**

**TESTIMONY BEFORE THE HOUSE COMMITTEE ON  
FINANCE**

**SB 2510 SD2 HD1**

**Relating to Renewable Energy**

Wednesday, April 6, 2022

1:30 pm, Agenda Item #14

State Capitol, Conference Room 308 & Videoconference

Marc Asano

Director, Integrated Grid Planning

Hawaiian Electric

Chair Luke, Vice Chair Yamashita, and Members of the Committee:

My name is Marc Asano and I am testifying on behalf of Hawaiian Electric Company **with comments regarding SB 2510 SD2 HD1, expressing concerns to Section 2, and offering suggested amendments.**

SB 2510 SD2 HD1 amends Hawaii Revised Statutes, Section 226-18 to reduce reliance on energy imports, ensure that all new utility scale electricity generation projects are renewable, balance of grid resources including firm renewable energy resources, reliably replace fossil fuel generation with balanced grid resources, and prohibit fossil fuel generation after 12/31/2045 except in certain circumstances.

Hawaiian Electric appreciates the intent of this bill and supports the requirement to modify H.R.S. §226-18 to emphasize the importance of a balanced renewable energy portfolio comprised of both firm and intermittent renewable energy to ensure grid reliability while still achieving the state's RPS and net negative carbon emissions goals. Hawaiian Electric also agrees that the electric power system of tomorrow must ensure customers receive reliable, affordable, equitable, resilient, low carbon electricity. And that reliable replacement of fossil fuel generation is key to meeting those objectives.

However, Hawaiian Electric expresses concerns that Section 2 may limit the State's ability to achieve 100 percent renewable energy in a reliable and cost-effective manner, place an undue burden on underserved communities, slow the pace of retirement of existing less efficient and less flexible fossil fuel units due to cost and availability of renewable fuels, and eliminate the ability for new, flexible firm generation from using fossil fuels following major storms, disruptions to supply, and other unforeseen events and emergencies.

As such, Hawaiian Electric offers the following amendments to ensure an equitable, cost-effective, and flexible transition to 100% renewable energy (suggested amendments are underlined and bolded):

- On page 5, lines 12-16: (4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use[~~;-and~~], including but not limited to ensuring that all new utility scale electricity generation projects shall be renewable **capable**;
- On page 7, lines 1-6: (b) To achieve the energy objectives, it shall be the policy of [~~this~~] the State to ensure the short- and long-term provision of adequate, reasonably priced, reliable, equitable, and dependable energy services to accommodate demand[~~;~~] and reduce reliance on **fossil fuel** imports, and that electrical energy services shall be renewable **capable**.
- On page 8, lines 13-17: (5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply [~~option~~] grid resources options that are **not fossil fuels renewable capable**, and maximizes efficient technologies;

Hawaiian Electric notes that not all firm renewable generation is subject to a power purchase agreement and offers the suggested amendments to recognize the benefits and attributes that firm power provides (i.e., rated capacity). The suggested amendments are also in alignment with Hawaiian Electric's suggested amendments to the firm renewable energy definition in SB 2511 HD1 (suggested amendments are underlined and bolded):

On page 10, lines 13-15: "Firm renewable energy" means renewable energy and that is **always** available on the demand of the energy system operator **at its rated capacity, subject only to routine maintenance and emergency repairs. consistent with the terms of an approved power purchase agreement.**

The abovementioned amendments are necessary because Hawaiian Electric will integrate large amounts of solar and battery energy storage projects in the next few years that have the potential to reach upwards of 50% RPS total across the islands we serve, and expects to continue to integrate greater amounts of solar and wind resources in the next 5-10 years with upcoming competitive procurement for new renewable generation. This will result in significant reductions in fossil fuel usage, and necessitate older less flexible fossil fuel generators to be replaced with more flexible renewable capable firm generators that are run intermittently on cloudy or windless days (instead of running existing fossil fuel generators 24 hours a day). With the integration of renewable intermittent generation, from a total system perspective there will be an overall significant net reduction in fossil fuel consumption even with limited use of flexible generation that is intended to use renewable fuels but may use fossil fuel from time to time. To be clear, Hawaiian Electric expects to acquire new renewable firm flexible generators, however, there should be allowances that those generators have

capabilities to burn renewable or fossil fuels, or a blend. It is further expected that over the long-term these same flexible generators could be outfitted to use hydrogen, and the current research, development, and testing in this area use a blend of hydrogen and natural gas to generate electricity for a low carbon firm generation source, which would not necessarily be allowed under the proposed modifications of HD1.

If in-state (or out of state) renewable fuels are not immediately available, and fossil fuel is not an option (pursuant to the proposed modifications in HD1) for these new flexible generators that are intended to complement intermittent generation to ensure a reliable and resilient grid, then Hawaiian Electric would be forced to continue using its older less efficient generators that are not conducive to integrating higher amounts of wind and solar energy. Mandating a switch to renewable fuels may also cause a significant burden to underserved communities in cases where renewable fuels are significantly more expensive than fossil fuels, there should be flexibility to use multiple types of fuels in the best interest of customers. Having fuel flexibility and not being limited to renewable only fuels (i.e., biomass or biofuel) would make for a more resilient grid where new utility scale generation that is added would have that flexibility should a hurricane, major supply chain issue, fallen trees after a storm, or geopolitical events affect the supply of renewable fuels, and in the event solar and wind plants are damaged. Underserved communities would be disproportionately affected in this situation as these communities are less likely have the means to be energy self-sufficient during these times.

Accordingly, Hawaiian Electric expresses its concerns to Section 2 of the measure and respectfully requests the amendments proposed above be incorporated. Thank you for this opportunity to testify.

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:49:06 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Robert Culbertson	Hawaii Forest Stewards	Oppose	Written Testimony Only

Comments:

Aloha Senators!

We are in a climate emergency; we should not incentivize energy sources that harm the climate! Not all renewables are good for the environment. Firm renewable energy as currently defined, would include wood-burning biomass. Burning trees is worse for the climate than burning fossil fuels. Standing timber is nature's tool to mitigate further climate change. **Burning wood would be a "double whammy " on the climate** because it eliminates sequestration of atmospheric carbon dioxide by the trees and emits carbon into the atmosphere when burned. Even if trees are replanted, that will not replace the lost sequestration for decades, if ever.

**Therefore:** I oppose the inclusion of possible tax credits for firm energy produced by burning wood biomass. Pursuing expanding the renewable energy technologies income tax credit to firm renewable energy systems and thereby incentivizing burning wood products as an energy source will worsen the climate and negatively impact our economy. This bill as written would undermine our progress towards 100% truly clean, renewable energy and take us in the wrong direction.

We can't afford to keep pumping more CO2 into the atmosphere. According to the latest United Nations' Intergovernmental Panel on Climate Change (IPCC) report, any further delay in reducing our emissions will miss a brief and rapidly closing window of opportunity to secure a liveable and sustainable future for all. Unless trees and other wood products are excluded from the definition of renewable energy, I urge you to **oppose** this ill-advised bill.

Mahalo!

R A Culbertson

Member, 'Hawaii Forest Stewards'

Honokaa



**SB-2510-HD-1**

Submitted on: 4/5/2022 10:03:48 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Ted Bohlen	Climate Protectors Hawai'i	Oppose	Written Testimony Only

Comments:

To: The Honorable Sylvia Luke, Chair, The Honorable Kyle Yamashita, Vice Chair, and Members of the House Committee on Finance

From: Climate Protectors Hawai'i (by Ted Bohlen)

Re: Hearing **SB2510 SD2 HD1 RELATING TO RENEWABLE ENERGY.**

Hearing: Wednesday, April 6, 2022, 1:30 p.m., CR 308 and by videoconference

Aloha Chair Luke, Vice Chair Yamashita, and Members of the House Committee on Finance:

The Climate Protectors Hawai'i is a group focused on reversing the climate crisis and encouraging Hawai'i to lead the world towards a safe and sustainable climate and future. **The Climate Protectors Hawai'i notes that this HD1 version is much better than the SD2, but still respectfully OPPOSES it.**

Our concern with the bill is in how it defines "firm renewable energy;" it "means renewable energy that is available on the demand of the energy system operator consistent with the terms of an approved power purchase agreement." **This could include wood-burning biomass as defined in HRS Sec. 269-91. In setting energy policy, this bill needs to avoid exacerbating the climate emergency by including wood-burning biomass.**

**Not all renewables are better for the climate than fossil fuels.** In order to mitigate the impending harms of the climate emergency that Hawai'i has recognized, Hawai'i needs to develop renewable fuels that emit few if any greenhouse gases on a life cycle basis. **Burning wood would be a "double whammy" on the climate** because it eliminates sequestration of atmospheric carbon dioxide by the mature trees and emits carbon into the atmosphere when burned. Even if replacement trees are planted and reach maturity in a couple of decades, that will not replace the lost sequestration for decades, if ever. **Burning mature trees is even worse for the climate than burning coal!**

While "renewable energy" is generally better than using fossil fuels, the term "renewable" still holds a lot of ambiguity. It is a political definition, not a scientific one, roundly regretted by scientists involved with the Kyoto Protocols, as it opens a loophole for burning biomass. We're out of time for burning carbon and need to be on an expedited course of replacing every such

energy source. **We're out of time for burning biomass, and need to be on an expedited course to plant, compost, and regenerate *additional* biomass into sequestering GHGs, not BURN it!**

*To quote the founder of [350.org](http://350.org), Mr. Bill McKibben:*

"The logic (of biomass burning) originally seemed sound: if you cut a tree, another grows in its place, and it will eventually soak up the carbon dioxide emitted from that burning the first tree. But, again, ["eventually" is the problem](#). Burning wood is highly inefficient, and so it releases a huge pulse of carbon *right now*, when the world's climate system is most vulnerable. Trees that grow back in a few generations' time will come too late to save the ice caps."

**Please help to mitigate the climate crisis by deferring this bill!**

Mahalo for the opportunity to testify!

Climate Protectors Hawai'i (by Ted Bohlen)



To: The House Committee on Finance  
From: Sherry Pollack, 350Hawaii.org  
Date: Wednesday, April 6, 2022, 1:30pm

**In strong opposition to SB2510 SD2 HD1**

Aloha Chair Luke, Vice Chair Yamashita, and members of the Finance committee,

I am Co-Founder of the Hawaii chapter of 350.org, the largest international organization dedicated to fighting climate change. 350Hawaii.org **strongly opposes SB2510 SD2 HD1** that would establish a firm renewable energy generation policy in the Hawaii State Planning Act.

350Hawaii appreciates the intent of this measure, and supports and encourages the efforts of the legislature to promote **truly clean, non-climate harming renewable energy**, increasing our sustainability and energy self-sufficiency. We also appreciate significant improvements to this measure with the HD1 amendment. However, serious concerns remain regarding how SB2510 SD2 HD1 defines "firm renewable energy."

In this measure, firm renewable energy "means renewable energy that is available on the demand of the energy system operator consistent with the terms of an approved power purchase agreement." As currently defined, this could include wood-burning biomass as defined in HRS Sec. 269-91. To be clear, establishing a firm renewable energy policy that includes burning trees and wood products would result in unintended negative consequences to our environment and climate, and would take us in the opposite direction of our energy self-sufficiency goals.

Not all renewable energy sources are necessarily good for the environment or sustainable. Besides being more expensive than utility-scale wind and solar, burning wood for energy is disastrous for the climate. It destroys forests, and puts out more carbon dioxide into the air than coal. The period for regrowth and making up that carbon debt can take many decades or more, time which we no longer have the luxury of wasting. We are in a climate crisis and must make scientifically sound choices that will reduce greenhouse gas emissions as soon as possible if we are to stay below 1.5 degrees Celsius rise. Now is not the time to promote technologies that increase greenhouse gases simply because they are not derived from fossil fuels. **According to the latest United Nations' Intergovernmental Panel on Climate Change (IPCC) report, any further delay in reducing our emissions will miss a brief and rapidly closing window of opportunity to secure a livable and sustainable future for all.**

In short, establishing a firm renewable energy generation policy and thereby incentivizing burning wood products as an energy source will worsen the climate, negatively impact our economy, and undermine our resiliency efforts. Unless this bill is amended to specify that burning trees and other wood products shall not be considered an acceptable generation source for either firm or intermittent renewable power, we urge you to not pass this bill.

Mahalo for the opportunity to testify.

Sherry Pollack  
Co-Founder, 350Hawaii.org



**OPPOSE SB2510 SD2 HD1**



**Testimony to  
The Committee on Finance  
Wednesday, April 6, 2022  
1:30 PM  
Conference Room 308 & Via Video Conference, Hawaii State Capitol  
SB 2510 SD2, HD1**

Chair Luke, Vice Chair Yamashita, and members of the committee,

Hawaii Clean Power Alliance (HCPA) **supports the intent of** SB 2510 SD2 HD1, which establishes firm renewable energy generation policy in the Hawaii State Planning Act to ensure the reliable one hundred percent replacement of fossil fuel electricity generation to increase the sustainability and energy self-sufficiency of the State to improve the quality of life for residents and visitors; includes policy of incentives to facilitate and encourage fuel-producing crops and energy-producing crops and bioenergy and standards for achieving renewable portfolio standards. We offer these **comments.**

Hawaii Clean Power Alliance is a nonprofit alliance organized to advance and sustain the development of clean energy in Hawaii. Our goal is to support the state's policy goal of 100 percent renewable energy by 2045. We advocate for utility-scale renewable energy, which is critical to meeting the state's clean energy and carbon reduction goals.

1. Please consider amending the bill to require that the state energy functional plan (Published 31 years ago, in 1991) be updated. The remainder of the bill to update policy to align with the current change is critically important to create a framework of how the state will achieve its goal of 100% renewable electric energy by 2045. The state's energy functional plan must be updated to reflect current goals and factors if the policy goal of the state can be met in an expeditious and thoughtful manner, ensuring that the residents and businesses benefit from reliable, resilient, and affordable energy.

Historically, the electric utilities have driven the plans and actions to achieve the RPS goal. Their knowledge of the grid is extremely important in the process. However, the state's update to the plan and policy will help guide and direct an integrated approach to the utilities, state departments that affect the sector, and the industry partners to provide a clear view of what will be required in technology needs and at different points in time. Additionally, once the plan is updated, the policy makers can choose to support the plan through additional policy such as incentives or regulations.

2. We also ask this committee to consider amending the definition of “firm renewable energy.”

The definition of firm renewable energy in HD1 was revised to delete “always” available, and to include “consistent with the PPA agreement”. This would result in the unintended consequence that will define intermittent renewable energy as firm renewable energy.

"Firm renewable energy" means renewable energy that is always available to produce energy at its designed capacity on the demand of the energy system operator ~~consistent with the terms of an approved power purchase agreement.~~

For example, if an intermittent facility has a four-hour battery in the PPA agreement, that would qualify as “firm renewable energy,” even though the energy may not always be available nor always providing firm baseload energy that can replace fossil fuels.

3.<sup>1</sup> Additionally, HD1 has amended the bill to delete the 45% maximum of one technology and the minimum of 55% firm renewable energy, although the recent proposal by Hawaiian Electric calls for 50% firm renewable energy for Oahu. Taking out these percentages leaves Hawaii policy as status quo and endangers the achievement of a reliable transition to 100% renewable generation. We ask the committee to reinsert these percentages.

The last committee recognized the importance of firm renewable (baseload) vs intermittent renewable energy. Both are required to achieve a reliable and resilient energy grid. The functional plan and the policy will ensure that the state and each island has diversified resources that can truly remove our dependence on fossil fuel in a safe and reliable manner.

We urge the committee to amend the definition of firm renewable energy, include a minimum percentage of firm renewable energy and a maximum percentage of any one technology and pass the bill.

Thank you for the opportunity to testify.

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## **WHY FIRM GENERATION IS IMPORTANT (CAPACITY)**

Importantly, one of the main purposes of this bill is to ensure grid reliability by requiring a minimum amount of capacity, which can be relied upon on the grid at any time. The U.S. Energy Information Administration (EIA) refers to capacity as the maximum output of electricity that a generator can produce. A facility with a capacity factor of 100% means it's producing power all the time. The electric system needs a minimum amount of capacity power to be available all the time to keep the grid running 24X7 reliably, in other words, baseload or firm generation. Nationally, the Federal Energy Regulatory Commission (FERC) mandates reliability standards including reserve margins. Hawaii is not subject to FERC and has not implemented reliability standards in a manner similar to other jurisdictions, leaving the utility and the PUC not subject to independent third-party oversight.

Hawaiian Electric just issued a press release stating their intent to acquire 500-700 megawatts of firm renewable capacity on the Oahu grid to supplement the 1,794 MW of firm fossil fuel capacity. With the coal plant decommissioning on 9/1/2022 (180 MW), which delivered 16-20% of the electric grid's firm baseload capacity, and many of the forecasted solar/battery projects delayed (376 megawatts), time is of the essence to procure this renewable firm generation.

Today, the Oahu grid consists of 67% firm capacity. The additional firm renewable acquisition will move the percentage close to 75% firm generation.

## **WHY A DIVERSIFIED PORTFOLIO IS IMPORTANT (CAPACITY AND ENERGY)**

Energy, or electricity generation is another consideration in the reliability equation. Energy is the amount of electricity a generator produces over a specific period of time. Many generators do not operate at their full capacity all the time, such as solar or wind, (intermittent or non-firm energy). The facilities' output may vary according to the conditions of the resource of the energy. These variables are why it is important for the system to have a variety of resource types, including those that can start up or dial back quickly in response to sudden changes in consumer demand or to react to the output of other resources on the grid. For instance, a solar farm can be rated at a 10-megawatt capacity available for 6-hours, but if the sun isn't shining for 6 of those hours, then the energy available for that day is only 5 megawatts.

## **REAL WORLD EXAMPLE: CAPACITY SHORTFALL IN NEW ENGLAND**

The recent events in the winter of 2017/2018 led to New England's system being challenged due to not enough capacity available when customers needed it. It was believed that the system was designed with what appeared to be more than enough capacity to satisfy peak demand plus reserve requirements.

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However, an unprecedented cold winter storm forced many generators offline or reduced their energy output because the input of resources was not available. So, while sufficient capacity seemed to be available, the energy coming out of those generators were perilously short to meet the demand.

### **HAWAII EXPERIENCE OF CAPACITY SHORTFALL**

A similar experience happened on Oahu as recently as New Year's Eve 2021. The energy provided by generation facilities was compromised by numerous days of rain. That is why both firm and intermittent generation is necessary, and importantly a diversification of technologies so that one is not overly dominant, to mitigate the risk of the grid having blackouts due to an unprecedented weather event.

Testifiers may want to insert language into this bill that defines firm renewable technology, and which one is "better" or "renewable" or "cleaner" in terms of price or life-cycle analysis greenhouse gas emissions. Respectfully, this bill is not the vehicle to advocate for one technology over the other. When the regulators decide which project is approved or denied, the Public Utilities Commission is guided and mandated by Subsections in HRS§ 269, which have carefully been considered by the legislature and defines renewable energy by source, as well as their decision making criteria to consider the need to reduce the state's reliance on fossil fuels and explicitly consider factors such as price, export of moneys to import fuels, fuel supply availability and greenhouse gas emissions.





Testimony Before the House Committee on Finance

By David Bissell  
President and Chief Executive Officer  
Kaua'i Island Utility Cooperative  
4463 Pahe'e Street, Suite 1, Lihu'e, Hawai'i, 96766-2000

Wednesday, April 6, 2022; 1:30 pm  
Conference Room #308 & Videoconference

**Senate Bill No. 2510 SD2 HD1 - RELATING TO RENEWABLE ENERGY**

To the Honorable Chair Sylvia Luke, Vice Chair Kyle T. Yamashita and Members of the Committee:

Kaua'i Island Utility Cooperative (KIUC) is a not-for-profit utility providing electrical service to more than 34,000 commercial and residential members. **KIUC offers comments on this measure.**

Over the past 10 years, KIUC has significantly increased its renewable generation. In 2020, KIUC's energy mix included 67% renewable and rose to nearly 70% in 2021: leading the state. For the past three years, KIUC has operated the Kaua'i electric grid at 100% renewable for thousands of hours on sunny days. The West Kauai Energy Project (WKEP), currently in development, has the potential to bring Kauai to nearly 90% renewable generation by the end of 2025: well ahead of all existing Renewable Portfolio Standard (RPS) benchmarks. WKEP will contribute significantly to KIUC's firm renewable portfolio.

Even with this accelerated progress, achieving 100% renewable will be a difficult task. Beyond WKEP, solar and storage is the only viable option for KIUC, unless technologies significantly evolve over the next ten years. It is vital that utilities seeking to meet the state mandate of 100% renewable by 2045 be offered the greatest flexibility possible in employing technologies that are compatible with the geographic, economic, social, and environmental characteristics of the areas they serve. Additionally, narrowly defining "firm renewables" also restricts flexibility and options for utilities as they strive to meet RPS in the most affordable way for their customers.

The current version of this bill addresses most of KIUC's concerns. One edit we offer for consideration is an additional refinement of the definition of firm renewable energy as follows:

*"Firm renewable energy" means renewable energy that is available on the demand of the energy system operator consistent with the terms of an approved power purchase agreement, or via operation of utility owned generating assets.*

This change would allow for conversion of current conventional generation units owned by the utility to be used with renewable fuel sources.

Mahalo for your consideration.

**SB-2510-HD-1**

Submitted on: 4/4/2022 12:27:47 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
JON WHITE	Individual	Support	Written Testimony Only

Comments:

I support this bill with the SD2 wording

**SB-2510-HD-1**

Submitted on: 4/4/2022 1:01:03 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Douglas Perrine	Individual	Support	Written Testimony Only

Comments:

SB2510 is a bill that can contribute to Hawaii achieving its clean energy goals. However it could use a little more work. Specifically, it should be clarified that "firm renewal energy generation," as in Section (8) on p. 6. may include generation of energy from sources normally considered intermittent, such as wind & solar, combined with an energy storage system of a sufficient capacity that this energy will be available on demand at any time. Also, please note that on p. 10, sections (13) and (14) are identical.

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:44:16 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
chad Failma	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:44:26 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
kodey saizon	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:49:12 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Christopher	Individual	Support	Written Testimony Only

Comments:

I am in support of SD2 version of bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:50:56 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Burton Chun	Individual	Support	Written Testimony Only

Comments:

I support SB 2510

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:50:57 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
William Campbell	Individual	Support	Written Testimony Only

Comments:

I support this bill Mahalo



**SB-2510-HD-1**

Submitted on: 4/4/2022 3:53:44 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Dave Teriirere	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:55:07 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
noah kassebeer	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:58:23 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Alana Kaili	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:58:39 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Keoni Mendiola	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of the bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:59:08 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Ted Scott	Individual	Support	Written Testimony Only

Comments:

I SUPPORT THE SD2 VERSION OF THIS BILL

**SB-2510-HD-1**

Submitted on: 4/4/2022 3:59:34 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Hubert Pruett	Individual	Support	Written Testimony Only

Comments:

I am in support on the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:01:16 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jason Yoshimura	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill 🍷🍷🍷

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:03:26 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Tyler Yuu	Individual	Support	Written Testimony Only

Comments:

I am in supprt of the SD 2 version of this bill



**SB-2510-HD-1**

Submitted on: 4/4/2022 4:14:04 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Manny Kulukulualani	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:25:48 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Clinton Blackman	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:25:48 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Levi Archuleta	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:26:35 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Keenan L	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:26:59 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Chauncey Dunhour	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill. Mahalo

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:30:43 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Trey Ah Yuen	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:35:29 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Walter Walker	Individual	Support	Written Testimony Only

Comments:

I strongly support

**SB-2510-HD-1**

Submitted on: 4/4/2022 4:36:30 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Chaz Bajet	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.



**SB-2510-HD-1**

Submitted on: 4/4/2022 4:37:04 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jonovan Tuinei	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 5:13:00 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Noah Campbell	Individual	Support	Written Testimony Only

Comments:

I'am in support of SD2 version of this Bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 5:31:39 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Adrian Kaleo Nakashima	Individual	Support	Written Testimony Only

Comments:

I am in support of th SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 5:43:34 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jacob Ramos	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this Bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 5:55:04 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Wade Terlep	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 6:04:37 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Brennon Pias	Individual	Support	Written Testimony Only

Comments:

I am in support of SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 6:57:35 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Hopena Pokipala	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 7:11:52 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Conan K Donahue	Individual	Support	Written Testimony Only

Comments:

I am in support of SB2510



**SB-2510-HD-1**

Submitted on: 4/4/2022 8:16:07 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Zorich Palimoo	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/4/2022 8:58:09 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Robert Enriquez	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 9:07:54 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
jeanne wheeler	Individual	Oppose	Written Testimony Only

Comments:

I'm writing to register my strong opposition to this bill - please do NOT pass! Mahalo, JW

**SB-2510-HD-1**

Submitted on: 4/4/2022 9:30:38 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Edward J Klaneski	Individual	Support	Written Testimony Only

Comments:

I am in strong support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/4/2022 11:13:05 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Harald Ebeling	Individual	Oppose	Written Testimony Only

Comments:

Dear Committee Members,

I am writing to express my strong opposition of SB2510 SD2 HD1 which foresees tax credits for energy created by *burning wood*. Considering this process "renewable energy" is either a terrible misunderstanding or a ploy to subvert the rapid transition to truly renewable energies that our state desperately needs. While trees can certainly be considered "renewable", they don't grow overnight to re-sequester the carbon that burning wood releases into the atmosphere NOW. CO2 emissions must be dramatically *reduced*, not increased - which is what this bill will enable if tax credits are granted for burning wood.

Unless burning trees (and other biomass) is explicitly excluded from the definition of renewable energies, I oppose this bill and urge you to do the same.

Mahalo!

Harald Ebeling

**SB-2510-HD-1**

Submitted on: 4/4/2022 11:21:28 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Alice Kim	Individual	Support	Written Testimony Only

Comments:

Funding renewable energy research in Hawaii can help the State of Hawaii reach its goal of 100 percent renewable energy by 2045 and can offer the following advantages:

- Lower the cost of electricity in the state with the highest electricity price in the nation
- Increase Hawaii's energy security
- Greatly reduce carbon emissions involved with creating energy
- Increase the self-sustainability of the Hawaiian islands
- Reduce the importation of oil
- Support our local research industry and create local professional jobs

Please support SB 2510.

**SB-2510-HD-1**

Submitted on: 4/4/2022 11:41:33 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jessica Harvey DVM	Individual	Oppose	Written Testimony Only

Comments:

I oppose the inclusion of possible tax credits for firm energy produced by burning wood biomass. Pursuing expanding the renewable energy technologies income tax credit to firm renewable energy systems and thereby incentivizing burning wood products as an energy source will worsen the climate and negatively impact our economy. This bill as written would undermine our progress towards 100% truly clean, renewable energy and take us in the wrong direction.

**SB-2510-HD-1**

Submitted on: 4/4/2022 11:53:18 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Gabriel	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.



**SB-2510-HD-1**

Submitted on: 4/5/2022 4:08:31 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Christopher Dean	Individual	Oppose	Written Testimony Only

Comments:

We would love to support this bill, but we can't. The only way we can support this bill is if there's a clearly written and permanent ban on all biomass electrical generation, particularly burning trees. Study after study proves that biomass is worse than coal for the environment. There are so many reasons why biomass is bad, they're too numerous to mention here. But if you're really interested, I would encourage you to contact me through Recycle Hawaii and I will be happy to discuss why burning things to stop the planet from heating up is a bad idea. The fundamental reason why biomass is not acceptable is because it is not carbon neutral, as the industry claims. Back when this industry first started, humanity was ignorant about the science behind biomass plants, now we know better. Biomass can never be carbon neutral because after you clear cut a forest, the land is a carbon emitter for decades. Then, even if the utility does follow through on their promise to replant the trees, they'll just cut them down again, long before they start to sequester CO2. So, here you have a forest that is storing carbon, you cut it down and burn it which releases tons of carbon into the atmosphere, while also turning land that was capturing carbon into land that's emitting carbon. Even the Amazon forest is a net carbon emitter now. Burning trees for energy is a lie, it's not sustainable, in fact, it's a death sentence.

You know what is a firm, reliable, sustainable source of energy? Solar energy with batteries, or gravity storage, pump storage, or hydrogen. We need a diversified solar energy grid with home and commercial rooftop solar. Energy can be stored on site at homes and businesses in batteries to level the base load. Utilities all across the country are already doing this. Buying electricity from citizens is cheaper for utilities than buying it from "peaker" plants or neighboring utilities, which is not an option for Hawaii. Bring back net metering for solar if you want a rapid transition away from fossil fuels. I know it goes against the status quo of "take from the many and give to the few" but we live in a democracy, which takes precedence over capitalism. You're job as an elected official is to do what's right for the majority of citizens, not the wealthy few. Net metering is an opportunity to put money in the pockets of the average citizen while simultaneously saving life on Earth from imminent and irreversible extinction. Now, utilities are going to argue that it's not fair to make customers who don't have solar, subsidize those that do. Yes it is fair. In a market economy, all utility customers have the option to switch to solar. If a customer doesn't want to subsidize other solar customers, then they should stop burning fossil fuels and put solar on their roof. In the end, when everyone is making more solar energy than they use, we'll have more energy for projects like making hydrogen as an export

commodity. Net metering will be the biggest economic boon Hawaii has ever seen, dwarfing tourism, which is about to collapse, due to the loss of our beaches and beautiful natural habitat. Remember, energy is the only thing there is. There is no matter, only energy and powering the world with solar is the only hope of survival. One thousand square miles of solar, powers the United States entire energy demand, including transportation. There's more than ten times that amount of developed land for solar, the cheapest and least destructive source of energy.

**SB-2510-HD-1**

Submitted on: 4/5/2022 4:11:59 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Patricia Ann Kemper	Individual	Oppose	Written Testimony Only

Comments:

Aloha,

I am very much against this bill. Burning trees for energy reduce our rainforest. Rainforests are vital ecosystems that must be maintained and new creations of the ecosystems supported.

Other negative points are smoke pollution, soil erosions, destruction of vital insect and wildlife habitats, and a decrease in co2 filtering. The air in our beloved state is clear and pure. Fewer trees to filter co2 and produce oxygen is something we must not contribute to.

Malama aina,

Ann Kemper

**SB-2510-HD-1**

Submitted on: 4/5/2022 5:32:13 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Dane Kaluhiwa	Individual	Support	Written Testimony Only

Comments:

I am in support of SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 6:45:47 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
anthony padilla	Individual	Support	Written Testimony Only

Comments:

In support of the sd version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 6:55:00 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Cisco Valeho	Individual	Support	Written Testimony Only

Comments:

I am in support of SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 8:08:35 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Cheryl Reeser	Individual	Oppose	Written Testimony Only

Comments:

Aloha Honorable Members of the Finance Committee,

I am writing to strongly oppose SB2510 SD2 HD1. Burning trees for fuel is not the answer and will have harmful long term impacts on our environment. Let's make good choices about energy resources now as the wrong choices cannot be reversed.

Mahalo,

Cheryl Reeser  
Makawao, Maui

**SB-2510-HD-1**

Submitted on: 4/5/2022 8:09:17 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
David Hunt	Individual	Oppose	Written Testimony Only

Comments:

SB 2510 HD1 Provides an unethical, underhanded, corrupt political favor and back door - special opportunity for Hu Honua. The only new "firm renewable" energy project proposed for the Big Island is the corporate scam known as Hu Honua.

To vote for 2510 HD1 is an endorsement of corrupt political favoritism, bought with "campaign contributions, slick PR, and corporate lies. Will you turn your back upon your resident voting constituents?

Vote NO on SB2510 HD1. Do NOT give Hu Honua an exclusive end-run around the normal permitting process, the PUBLIC Utilities Commission and our courts. Do not stifle our public voices, our right to representation and consumer protection.

Make the right, ethical choice. Your vote matters and is being closely monitored.



**SB-2510-HD-1**

Submitted on: 4/5/2022 8:14:21 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Lawrence DeCosta III	Individual	Support	Written Testimony Only

Comments:

I am support of the SD2 Version of this Bill.

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:04:21 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Mary Kathryn Afable	Individual	Oppose	Written Testimony Only

Comments:

Aloha,

My name is Mary Afable and I live in Hilo. I strongly oppose the Grid Resources Balancing (SB2510, SD2, HD1) for the following reasons.

**Damage to Hawaii Island road infrastructure.** Heavily laden lumber trucks will damage the fragile bridge infrastructure on the Big Island. Currently, HDOT has limited the weight of vehicles allowed to use Kolekole Bridge and Nanue Bridge which span deep gulches on the Hamakua Coast. Vehicles over 12 tons (buses, tractor trailers, and some emergency vehicles) are not permitted until emergency repairs are completed. With weight limits on the bridges, lumber trucks will be forced to make a detour of around 100 miles depending on the location of the forest. The detour will include travel through downtown Hilo. Many of the other Hamakua bridges are old. The stress of heavy lumber trucks will only cause additional bridges to require repairs or replacement that much sooner.

Will Big Island residents be forced to pay more for electricity to cover Hu Honua's higher transport costs? Will drivers in Hilo have to contend with lumber trucks on busy, narrow streets? Will we all pay for the excessive wear and tear on bridges caused by Hu Honua lumber trucks?

**Fewer jobs are created by burning biomass than with solar and wind power and pay less.**

Average salaries in 2017, for solar and wind workers were higher than biomass burning workers.

- Solar (\$72,430)
- Wind (\$64,230)
- Biomass burning jobs (\$54,460)

Number of jobs created:

- Solar creates 6.65 jobs per Gigawatt-hour
- Wind creates .45 jobs per Gigawatt-hour

- Biomass burning creates .42 jobs per Gigawatt-hour

**Excessively high cost of electricity generated by Hu Honuae is not competitive now and will become less competitive over the next ten years.** Commercial-scale solar with battery storage will cost 8-9 cents/kilowatt hour. Electricity from Hu Honua will cost 22 cents/per kilowatt hour, and in ten years will rise to over 30 cents/kilowatt hour. Residents on the Island of Hawaii will be locked into exorbitant electricity rates that increase over time for a term of 30 years.

**Burning trees is not a “renewable” energy source in Hawaii.** Burning trees now does not become a renewable source for at least 30 years when replanted trees reach maturity. Kamehameha Schools has stated that it will not replant trees to replace the trees that are cut for burning.

**Cutting and burning trees will damage the environment of the Big Island.** Burning wood biomass emits as much or more air pollution than burning fossil fuels, including coal: particulate matter, nitrogen oxides, carbon monoxide, sulfur dioxide, lead, mercury, and other substances that can cause cancer or lung disease. Additionally, numerous scientific studies have shown that burning whole trees for electricity increases carbon emissions compared to coal and other fossil fuels. Recapture of carbon by growing new trees takes many decades.

This bill is a thinning disguised effort by a mainland investment corporation, Silverbelt Investments, the majority shareholder in Hu Honua to salvage its investment at great cost to the citizens of Hawaii.

Respectfully Submitted,

Mary Afable

1313 Kumukoa Street

Hilo, Hawaii



**SB-2510-HD-1**

Submitted on: 4/5/2022 9:05:57 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
richard gideon	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:14:07 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
ANDREW ISODA	Individual	Oppose	Written Testimony Only

Comments:

-- **Not all renewables are clean and better for the climate than fossil fuels.** In order to mitigate the impending harms of the climate emergency, we need to use truly clean, non-climate harming renewable energy that emits few if any greenhouse gases on a life cycle basis. **Burning wood would be a "double whammy" on the climate** because it eliminates sequestration of atmospheric carbon dioxide by the trees and emits carbon into the atmosphere when burned. Even if replacement trees are planted, that will not replace the lost sequestration for decades, if ever.

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:18:33 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Gwendellyn Cruise	Individual	Oppose	Written Testimony Only

Comments:

I strongly oppose this bill as written, as it opens the door for our "renewable energies" to come from burning of trees. I fear this bill is a clandestine strategy to burn trees for energy, which is honestly one of the most backwards ideas I have heard in a long while. We are in a dire situation. We don't have any time to waste. Passing this bill could set us back when we need to launch forward in our battle against climate change.

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:19:32 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Noel Morin	Individual	Comments	Written Testimony Only

Comments:

Dear Chair Luke, Vice-Chair Yamashita, and members of the Finance Committee,

**I support the intent of SB2510 SD2 HD1 but ask that we explicitly exclude energy solutions that involve burning trees or wood products from trees.**

While biomass energy providers can claim that new trees can sequester carbon, this sequestration happens only after a decade or two of growth. We cannot afford to pump even more CO2 into the atmosphere this decade. One need only reflect on this week's [IPCC report](#) to realize the need to cut and sequester legacy emissions dramatically.

Importantly, tree-based energy solutions create financial burdens and risks that our State cannot afford. Several studies (see links in this [report](#)) have demonstrated the cost burden of biomass plants that depend on trees.

Instead of burning trees, we need to keep them alive so that they continue to capture carbon. As needed, we can convert them to wood products that allow the carbon to continue to be stored and not released into the atmosphere.

Other biomass solutions may be acceptable. These involve annuals or fast-growing plants like hemp and bamboo. These have short growth cycles, so their carbon cycle MAY be OK. (There are still challenges with the carbon footprint associated with growing, harvesting, transporting, and burning the material.)

**Importantly, we have yet-realized geothermal and hydro resources that offer non-combustion-related energy solutions at rates that will benefit our residents.** For instance, the latest Puna Geothermal Venture docket (conditionally approved) lists firm geothermal-based energy at less than 6 cents/kWh (blended). This is lower than some solar-battery plant offerings and many times lower than that offered by the proposed tree-burning plant on Hawaii Island.

This measure can incentivize the research and development of these firm renewable energy solutions that are not fossil-fuel-dependent, don't rely on burning important carbon sinks, and have a lifecycle carbon emission rate compatible with our emission reduction goals.



Thank you for this opportunity.  
Noel Morin  
Climate Action Advocate - Hilo

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:27:00 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Debra Gavelek	Individual	Support	Written Testimony Only

Comments:

I support the original intent of this bill. Please revert back to the original bill's language.

Thank you

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:30:25 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Kahekili Fuchs	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 of this bill.

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:34:48 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
John Rabanal	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:46:16 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Tadia Rice	Individual	Oppose	Written Testimony Only

Comments:

Biomass burning/burning wood is highly inefficient. It releases a huge pulse of carbon as the world's climate system is most vulnerable. Trees that grow back will come too late to save the ice caps. I strongly oppose SB2510 SD2 HD1..

**SB-2510-HD-1**

Submitted on: 4/5/2022 9:49:50 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Ross Wilson Jr.	Individual	Support	Written Testimony Only

Comments:

I support the bill's original intent. Please pass the bill to allow the bill's details to be worked out during conference.

**SB-2510-HD-1**

Submitted on: 4/5/2022 10:01:20 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Kyle Miyahana	Individual	Support	Written Testimony Only

Comments:

I am in support of SB2510 relating to renewable energy.

**SB-2510-HD-1**

Submitted on: 4/5/2022 10:02:45 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Thomas Brandt	Individual	Oppose	Written Testimony Only

Comments:

I strongly oppose this bill.

Burning wood is highly inefficient It releases a huge akount of carbon *right now*, when the world's climate system is most vulnerable. Trees that grow back in a few generations time will come too late to save the ice caps.

Thanks for the opportunity to offer these comments.



**SB-2510-HD-1**

Submitted on: 4/5/2022 10:16:00 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Michael Carion	Individual	Support	Written Testimony Only

Comments:

I support the bill's original intent. Please pass the bill to allow the bill's details to be worked out during conference.

**SB-2510-HD-1**

Submitted on: 4/5/2022 10:56:42 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Hattie Gerrish	Individual	Support	Written Testimony Only

Comments:

Aloha Representatives,

I support this bill because we must do everything in our power to expand and accelerate the green energy revolution.

Not only is the climate crisis hitting harder every year, Putin's vicious attack on Ukraine has highlighted the importance of energy independence. Too often our country's ability to do the right thing is hampered by our dependence on importing fossil fuels from cruel, anti-democratic dictators. I am sick and tired of our state, which until recently depended on Russian oil, and our nation compromising our most sacred values because we need cheap energy.

Although burning biomass for energy may be the least preferable renewable energy option, I support keeping this option open because it is better than fossil fuel, which unlike biomass is always imported and is harder to put back in the environment. I do not support importing biomass for energy generation. The legislature should encourage the use of only the most clean and efficient bioenergy technologies, as some are better than others.

Mahalo for your consideration.

**SB-2510-HD-1**

Submitted on: 4/5/2022 11:02:34 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Diane Ware	Individual	Oppose	Written Testimony Only

Comments:

Dear Chair and Committee Members,

I strongly oppose this measure which sounds well intentioned but in fact could lead to increasing GHG emissions by burning biomass and lead to a loss of sequestration from continual cutting of mature trees.

We humans must not just act but act wisely if we want a world that is truly sustainable. Just hours ago, the UN released its latest climate science report showing that our chance to limit warming to 1.5°C is slipping away even faster than we thought. It's yet another warning that we're running out of time to avoid catastrophic damage

SB2510 SD2 HD1 ensures that all new utility scale electricity generation projects are renewable, balancing of grid resources including firm renewable energy resources, reliable replacement of fossil fuel generation with balanced grid resources, prohibiting fossil fuel generation after 12/31/2045. **WHILE THIS SOUNDS LIKE A GOOD IDEA, IT IS A CLANDESTINE STRATEGY TO INSTITUTE BURNING TREES FOR ENERGY.**

**WHY IS THIS IMPORTANT?** Firm renewable energy as currently defined, would include wood-burning biomass. Establishing a firm renewable energy policy that includes burning trees and wood products would be disastrous for our environment and climate, and would take us in the opposite direction of our energy self-sufficiency goals. **Burning wood would be a "double whammy " on the climate** because it eliminates sequestration of atmospheric carbon dioxide by the trees and emits carbon into the atmosphere when burned. Even if trees are replanted, that will not replace the lost sequestration for decades, if ever.

I respectfully urge you to be pono and reject this bill as written. It could be amended to exclude burning of biomass which can be worse than burning coal.

**SB-2510-HD-1**

Submitted on: 4/5/2022 11:18:22 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
joshua demello	Individual	Support	Written Testimony Only

Comments:

I'm in support of SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/5/2022 11:23:48 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
nepo leutu jr	Individual	Support	Written Testimony Only

Comments:

I am in support of the sd2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 11:52:14 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
John Gavelek	Individual	Support	Written Testimony Only

Comments:

I support the original intent of this bill. Please revert back to the original bill's language.

Mahalo!

**SB-2510-HD-1**

Submitted on: 4/5/2022 12:08:25 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jessica Haskin	Individual	Oppose	Written Testimony Only

Comments:

The intent of the bill seems good, however, burning trees to help mitigate climate change is a step backwards. Establishing a firm renewable energy policy that includes burning trees and wood products would be disastrous for our environment and climate, and would take us in the opposite direction of our energy self-sufficiency goals. Burning wood would be a "double whammy " on the climate because it eliminates sequestration of atmospheric carbon dioxide by the trees and emits carbon into the atmosphere when burned. Even if trees are replanted, that will not replace the lost sequestration for decades, if ever.

*Bill McKibben of 350.org said it perfectly and simply:*

"The logic (of biomass burning) originally seemed sound: if you cut a tree, another grows in its place, and it will eventually soak up the carbon dioxide emitted from that burning the first tree. But, again, "eventually" is the problem. Burning wood is highly inefficient, and so it releases a huge pulse of carbon *right now*, when the world's climate system is most vulnerable. Trees that grow back in a few generations time will come too late to save the ice caps."

Thank you for your consideration,

Jessica Haskin

Kilauea, HI

**SB-2510-HD-1**

Submitted on: 4/5/2022 12:37:37 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jessie Chambers	Individual	Support	Written Testimony Only

Comments:

I SUPPORT THE BILL'S ORIGINAL INTENT



**SB-2510-HD-1**

Submitted on: 4/5/2022 12:38:33 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Kekoa Masutani	Individual	Support	Written Testimony Only

Comments:

I support of SD2 version of this bill in regards to renewable energy.

**SB-2510-HD-1**

Submitted on: 4/5/2022 12:43:44 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Gavin Concepcion	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 12:49:36 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jay Amina III	Individual	Support	Written Testimony Only

Comments:

I am in support of SD2 Version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 12:58:13 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
sharon mees	Individual	Oppose	Written Testimony Only

Comments:

Not all renewables are clean and good for the climate or the area we live.

**SB-2510-HD-1**

Submitted on: 4/5/2022 1:00:10 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Phaethon Keeney	Individual	Oppose	Written Testimony Only

Comments:

The bill, SB2510 SD2 HD1 has been amended to be a less explicit threat to the people of Hawaii than the original SD1, however it still appears to be masked encouragement for a special interest group (Biomass & Incineration, an interwoven industry) and redundant to already existing State Law encouraging renewable energy generation of all types. I urge you to please OPPOSE SB2510 and it's focus on 'firm' renewable energy generation.

No one wants to have to sift thru veiled language providing loopholes and encouragement for industries the people of Hawaii do not want. I say this as SB2510 SD2 has as its primary focus a prescription of 'firm' renewable generation, which means 'always on or available sourcing of power generation' including geothermal, hydroelectric, biomass (wood burning) and trash incineration. Wind and solar are variable (due to weather and diurnal cycling) and thus would not apply, however recent advances in battery storage have made this distinction moot, while this definition of 'firm' in the bill would exclude those cheaper, cleaner, fairer opportunities for the community. With the exception of Hydroelectric, which faces some technical and cost hurdles currently, many communities have fought these less desirable forms of 'firm' renewable energy generation in their neighborhoods in favor of Wind and Solar plus storage, and SB2510's change to State Code needs to be opposed. We want to move away from the 'burning economy' and cool our planet.

Let's consider this bill SB2510 in it's original form, as it was designed specifically to require biomass' addition to power generation sources on the Big Island, by designating a majority percentage (55%) of the portfolio on any island be from the "firm renewable" category, while excluding any one source (the only other current Utility scale type project underway for the Big Island is geothermal) from being greater than 45%. SB2510 would have therefore required mandatory addition of Hu Honua, the only other proposed Utility scale 'firm' renewable project, despite regulatory obstacles and community opposition, including from the State Consumer Advocate, who clearly stated Hu Honua's plans were not in the Public Interest. This bill attempted to undercut the Public Utility Commission's mandate and authority to make this judgment in the interest of the Citizens of Hawaii and hoped to place the decision in the hands of a poorly informed political body rife with special interest influence. We are grateful this bill has edited that portion out, but the overall message is the same, this definition of 'firm' renewable promotes industries our communities do not want.

On all islands, the people of Hawaii do not want to burn trees for power, we want to PLANT TREES to safeguard what we can of a perilous future in the middle of changing Pacific weather patterns and geo-political forces. Ask any young child of Hawaii if they think it's a good idea to

chop and burn trees for power. Ask the traditional Hawaiian Cultural Practitioner who supports spiritual/scientific connection to 'Āina, protection of Wai cycling thru forested island ecosystems, and wise resource use thru a multigenerational lens. Kane, the sun, the winds it brings and water cycles it drives are considered primary life forces, why not take this cultural clue to how to direct Hawaii's energy policies into the future? Ask anyone who supported Hawaii's leadership in becoming the first State to Declare a Climate emergency. Ask the Lorax.

We have no time nor ethical wherewithal to burn trees for power and hope they regrow in changing climates many decades to centuries from now if we hope to get thru this planetary bottleneck before us right here and now.

Please promote ethical, community based, distributed Wind, Solar, Hydroelectric.

From the IPCC Climate Change 2022 Report released yesterday, April 4 2022, "About 17% of historical cumulative net CO<sub>2</sub> emissions since 1850 occurred between 2010 and 2019 [410±30 GtCO<sub>2</sub>]. By comparison, the current central estimate of the remaining carbon budget from 2020 onwards for limiting warming to 1.5°C with a probability of 50% has been assessed as 500 Gt CO<sub>2</sub>, and as 1150 Gt CO<sub>2</sub> for a probability of 67% for limiting warming to 2°C.

Previous IPCC reports established we will be at 1.5C near 2030 and 2C around 2040. We have less than 10 years to hold to a livable planet, as 2C has been described as a probable 'tipping point' beyond which anthropogenic factors could be dwarfed by cascading feedback loops toward a 'hothouse earth' state.

As for Incineration, much less do we want to be locked into a dependent one way trash economy burning plastic (a fossil fuel) for energy, polluting and sickening our communities and keeping them financially in debt. We do not want our local governments contractually locked into the plastics market (like H-power Oahu) with high overhead as incinerators are one of the most expensive forms of energy generation out there as well as most expensive waste management options.

Please promote real, cheaper, more just renewables such as Wind, Solar, and Hydroelectric, and OPPOSE SB2510.

Thank you,

Phaethon Keeney

Honokaa Hawaii

**SB-2510-HD-1**

Submitted on: 4/5/2022 1:14:48 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Kelsey Beck	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill

**SB-2510-HD-1**

Submitted on: 4/5/2022 1:26:13 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Alfred Horner	Individual	Support	Written Testimony Only

Comments:

I am in support of sd2 version of this bill



**SB-2510-HD-1**

Submitted on: 4/5/2022 2:38:43 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Joyce Barbarich	Individual	Support	Written Testimony Only

Comments:

I support the bill's original intent. Please pass the bill to allow the bill's details to be worked out during conference

**SB-2510-HD-1**

Submitted on: 4/5/2022 7:18:24 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Elizabeth Hansen	Individual	Oppose	Written Testimony Only

Comments:

Please please oppose this bill

SB2510 SD2 HD1 ensures that all new utility scale electricity generation projects are renewable, balancing of grid resources including firm renewable energy resources, reliable replacement of fossil fuel generation with balanced grid resources, prohibiting fossil fuel generation after 12/31/2045. **WHILE THIS SOUNDS LIKE A GOOD IDEA, IT IS A CLANDESTINE STRATEGY TO INSTITUTE BURNING TREES FOR ENERGY.** Firm renewable energy as currently defined, would include wood-burning biomass. Establishing a firm renewable energy policy that includes burning trees and wood products would be disastrous for our environment and climate, and would take us in the opposite direction of our energy self-sufficiency goals. **Burning wood would be a "double whammy " on the climate** because it eliminates sequestration of atmospheric carbon dioxide by the trees and emits carbon into the atmosphere when burned. Even if trees are replanted, that will not replace the lost sequestration for decades, if ever.

Mahalo

**SB-2510-HD-1**

Submitted on: 4/5/2022 7:21:20 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Rodger Hansen	Individual	Oppose	Written Testimony Only

Comments:

Please oppose this bill.

SB2510 SD2 HD1 ensures that all new utility scale electricity generation projects are renewable, balancing of grid resources including firm renewable energy resources, reliable replacement of fossil fuel generation with balanced grid resources, prohibiting fossil fuel generation after 12/31/2045. **WHILE THIS SOUNDS LIKE A GOOD IDEA, IT IS A CLANDESTINE STRATEGY TO INSTITUTE BURNING TREES FOR ENERGY. WHY IS THIS IMPORTANT?** Firm renewable energy as currently defined, would include wood-burning biomass. Establishing a firm renewable energy policy that includes burning trees and wood products would be disastrous for our environment and climate, and would take us in the opposite direction of our energy self-sufficiency goals. **Burning wood would be a "double whammy " on the climate** because it eliminates sequestration of atmospheric carbon dioxide by the trees and emits carbon into the atmosphere when burned. Even if trees are replanted, that will not replace the lost sequestration for decades, if ever.

Mahalo

**SB-2510-HD-1**

Submitted on: 4/5/2022 8:55:16 PM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Jeremy Garrett	Individual	Oppose	Written Testimony Only

Comments:

I strongly oppose this measure. Biomass is not clean energy. Designating it as such would be a short-sighted step which would not prevent global warming above 1.5 C.

**SB-2510-HD-1**

Submitted on: 4/6/2022 12:52:48 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Alfred Horner	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill.

**SB-2510-HD-1**

Submitted on: 4/6/2022 10:35:57 AM

Testimony for FIN on 4/6/2022 1:30:00 PM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Louis Mansanas jr	Individual	Support	Written Testimony Only

Comments:

I am in support of the SD2 version of this bill